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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,208	05/17/2005	Ulf Bodin	1505-1078	2005

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EXAMINER	
PARK, JEONG S	

ART UNIT	PAPER NUMBER
2454	

MAIL DATE	DELIVERY MODE
11/19/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/535,208	BODIN ET AL.	
	Examiner	Art Unit	
	JEONG S. PARK	2454	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/20/2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *36-68 and 70* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *36-68 and 70* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 May 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/20/2008 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 36-68 and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mark et al. (hereinafter Mark)(U.S. Pub. No. 2003/0118019 A1) in view of Porter et al. (hereinafter Porter)(U.S. Pub. No. 2001/0033646 A1), and further in view of Barkai et al. (hereinafter Barkai)(Patent No. 6,188,691 B1).

Regarding claim 36, Mark teaches as follows:

data network implemented by a first network level (IP network in figure 3) having a first addressing scheme (IP data packets 200 in figure 4) and at least a second network level (enhanced packet network 114 in figure 3) having a second addressing scheme (PPP packets 202 in figure 4) each network level provides connectivity over at

least one network domain (1st enhanced label edge router 116 in figures 3 and 4 connects two networks together, see, e.g., page 3, paragraph [0054] and page 4, paragraph [0062]), the data network is characterized in that a first group of Network Resource Managers (interpreted as routers in the IP network) is arranged to control the resources of the first network level (controlling resources of a network is the inherent router's function) and a second group of NRMs (routers in the enhanced packet network) is arranged to control the resources of the second network level, wherein the NRMs of the first group and second group comprise means for communicating on a common network level and for exchanging resource requests by using the first addressing scheme (two networks communicate via 1st E-LER, 116 in figure 4, by using IP data packets, 200 in figure 4, see, e.g., page 4, paragraph [0063]), wherein the NRMs of the second group (enhanced label multiplexer, 130 in figure 4, which is located inside of 1st enhanced label edge router ,116 in figure 4), further comprise means for performing an address mapping between the first and second addressing schemes (enhanced label multiplexer receives user IP data packets and converts them to PPP packets, see, e.g., page 4, paragraph [0063], lines 5-8 and figure 4).

Mark does not explicitly teach the control function of the network resource managers even though any router always manages and controls network resources, such as servers, hosts, and any nodes belong to the router consists a network.

Porter further teaches as follows:

a resource manager (13 in figures 1 and 2) receives resource requests and allocates resources to the service processing function (19 in figure 2) in response to resource requests (see, e.g., page 2, paragraph [0011], lines 11-13);

the resource manager includes a switch fabric, service processing function, universal directory function, nodal resource manager and nodal resource database (see, e.g., page 2, paragraph [0024] and figure 2);

a nodal resource manager (23 in figure 2, interpreted as a network controller) serves as a gatekeeper to all of the resources belonging to its particular domain (see, e.g., page 3, paragraph [0025], lines 1-3);

a nodal resource database (25 in figure 2, interpreted as a device controller) includes the type of resource and the capabilities of the resource (managing network resource information, see, e.g., page 3, paragraph [0026], lines 1-8); and

the provision of network services, such as routing, occurs as an interaction among service processing function, universal directory function, and nodal resource manger (functioning as a router to provide network service in response to the service request, see, e.g., page 3, paragraph [0027], lines 1-7).

Therefore Porter teaches a node, resource manager, serves as a gateway or edge router to all of the network resources belonging to its particular domain (network).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Mark to include a plurality of nodes, resource managers, serve as a gateway or edge router to all of the network resources belonging to their particular

domain (network), as taught by Porter in order to utilize the existing gateway or edge router as a network resource manager.

Mark in view of Porter do not teaches that a set of resources in the second group are aggregated into a single resource in the first group.

Barkai teaches as follows:

level 2 network (equivalent to applicant's second network level with MAC address) consists with switch and workstations are connected one another (see, e.g., col. 4, lines 3-12 and figure 1);

level 3 network (equivalent to applicant's first network level with IP address) consists with routers (see, e.g., col. 4, lines 3-12 and figure 1); and

a method of establishing a session layer virtual local area network (hereinafter VLAN), comprising the steps of defining a multicast flow and assigning members of the session layer VLAN to the multicast flow, mapping a multicast IP address assigned to the session layer VLAN to a multicast media access control (hereinafter MAC) address, declaring a session layer VLAN across all level 2 devices in the network and enabling multicast MAC traffic on those ports of the level 2 devices corresponding to the members of the session layer VLAN (see, e.g., col. 3, lines 1-10).

Therefore, Barkai teaches a direct communication to a set of resources belong to the other network by utilizing the well known VLAN mechanism.

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Mark in view of Porter to include the well known VLAN within two different network layers as taught by Barkai in order to maximize network efficiency.

Regarding claims 37 and 54, Mark teaches as follows:

the first network level is the Internet Protocol, IP, level (see, e.g., page 4, paragraph [0062], lines 1-4).

Regarding claims 38, 46, 55 and 62, Mark teaches as follows:

the second network level or the third network level is a link protocol level (Point-to-Point Protocol is well known data link level protocol, see, e.g., page 4, paragraph [0063], lines 5-8 and for further reference see RFC 1662).

Regarding claims 39 and 57, Mark teaches as follows:

the second network level (enhanced packet network 114 in figure 3) is a second protocol level (PPP protocol in figure 5A) controlling an overlay network on top of said IP level (see, e.g., page 4, paragraph [0065] and figure 5A).

Regarding claims 40 and 56, Mark teaches as follows:

the second network level (enhanced packet network 114 in figure 3) is a second IP level (PPP protocol in figure 5A) controlling an overlay network on top of said IP level (see, e.g., page 4, paragraph [0065] and figure 5A).

Regarding claim 41, Mark teaches as follows:

a third network level (interpreted as another second network level as explained above, enhanced packet network 114 in figure 3) having a third addressing scheme (PPP packets 202 in figure 4), the resources of said third protocol level is controlled by a third group of NRMs comprising means for exchanging resource requests with NRMs of the first network level using the first addressing scheme (two networks communicate

via 1st E-LER, 116 in figure 4, by using IP data packets, 200 in figure 4, see, e.g., page 4, paragraph [0063]).

Regarding claim 42, Mark teaches as follows:

the NRMs of the third group further comprise means for performing an address mapping between the first and third addressing schemes (enhanced label multiplexer receives user IP data packets and converts them to PPP packets, see, e.g., page 4, paragraph [0063], lines 5-8 and figure 4).

Regarding claims 43, 45 and 60, Mark teaches as follows:

the third network level is a third protocol level (PPP protocol in figure 5A) controlling an overlay network on top of said IP level (see, e.g., page 4, paragraph [0065] and figure 5A).

Regarding claims 44 and 61, Mark teaches as follows:

the third network level is a second IP level (PPP protocol in figure 5A) controlling an overlay network on top of said IP level (see, e.g., page 4, paragraph [0065] and figure 5A).

Regarding claims 47 and 63, Mark teaches as follows:

the NRMs (1st E-LER 116 in figure 3) within at least one of said groups are arranged in a hierarchical structure arranged to communicate with each other (the edge router communicates 1st IP network with network level and also communicates E-LSR with data link level, see, e.g., page 4, paragraph [0063], therefore the 1st E-LER is arranged in a hierarchical structure shown at least with two levels).

Regarding claims 48, 49, 64 and 65, Mark teaches as follows:

each of the NRMs (routers) is a logically centralized unit in a network and said logically centralized unit is distributed or backed up over several physical servers (it is inherent that network devices including servers and hosts are all connected to the routers to communicate with other networks).

Regarding claims 50 and 66, Mark teaches as follows:

the data network in at least one of the network levels comprises a Network Controller (NC) comprising means for receiving a request from an NRM (enhanced label multiplexer 130 receives OAM frames 204 and signaling frame 206 from IP network router, see, e.g., page 4, paragraph [0063], lines 8-10 and figure 4) and means for obtaining detailed information such as topology maps, traffic measurement information, alarms of the network domain that is controlled by said NRM in response to said request (MPLS provides OAM&P (Operation, Administration, Maintenance, and Provisioning) capabilities which permit the operator of the network to interrogate and control the operation of the network, see, e.g., page 1, paragraph [0007]).

Regarding claims 51, 52, 67 and 68, Mark teaches all the limitations of claim except for as follows:

means for receiving a request from the NC;

means for controlling vendor specific node technologies in response to said request; and

co-location of the DC and NC in at least one of the network domains.

Porter teaches as follows:

resource manager (13 in figures 1 and 2) receives resource requests and allocates resources to the service processing function (19 in figure 2) in response to resource requests (see, e.g., page 2, paragraph [0011], lines 11-13);

the resource manager includes a switch fabric, service processing function, universal directory function, nodal resource manager and nodal resource database (see, e.g., page 2, paragraph [0024] and figure 2);

a nodal resource manager (23 in figure 2, interpreted as a network controller) serves as a gate keeper to all of the resources belonging to its particular domain (see, e.g., page 3, paragraph [0025], lines 1-3); and

a nodal resource database (25 in figure 2, interpreted as a device controller) includes the type of resource and the capabilities of the resource (see, e.g., page 3, paragraph [0026], lines 1-8).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Mark to include a nodal resource manager, as taught by Porter in order to efficiently collect traffic information from all network devices.

Regarding claims 53 and 70, Mark teaches as follows:

a method in a data network implemented by a first network level (IP network in figure 3) having a first addressing scheme (IP data packets 200 in figure 4) and at least a second network level (enhanced packet network 114 in figure 3) having a second addressing scheme (PPP packets 202 in figure 4) each network level provides connectivity over at least one network domain (two networks communicate via 1st E-

LER, 116 in figure 4, by using IP data packets, 200 in figure 4, see, e.g., page 4, paragraph [0063]), the method is characterized in that it comprises the steps of:

controlling the resources of the first network level by a first group of Network Resource Managers (interpreted as routers in the IP network)(controlling resources of a network is the inherent router's function);

controlling the resources of the second network level by a second group of NRMs, wherein the first group and the second group of NRMs comprises means for communicating on a common network level (two networks communicate via 1st E-LER, 116 in figure 4, by using IP data packets, 200 in figure 4, see, e.g., page 4, paragraph [0063]);

exchanging resource requests between NRMs of the first and second group by using the first addressing scheme (two networks communicate via 1st E-LER, 116 in figure 4, by using IP data packets, 200 in figure 4, see, e.g., page 4, paragraph [0063]); and

performing an address mapping between the first and second addressing schemes (enhanced label multiplexer receives user IP data packets and converts them to PPP packets, see, e.g., page 4, paragraph [0063], lines 5-8 and figure 4).

Mark does not explicitly teach the control function of the network resource managers even though a router always manages and controls network resources, such as servers, hosts, and any nodes belong to the router consisting a network.

Porter further teaches as follows:

a resource manager (13 in figures 1 and 2) receives resource requests and allocates resources to the service processing function (19 in figure 2) in response to resource requests (see, e.g., page 2, paragraph [0011], lines 11-13);

the resource manager includes a switch fabric, service processing function, universal directory function, nodal resource manager and nodal resource database (see, e.g., page 2, paragraph [0024] and figure 2);

a nodal resource manager (23 in figure 2, interpreted as a network controller) serves as a gate keeper to all of the resources belonging to its particular domain (see, e.g., page 3, paragraph [0025], lines 1-3);

a nodal resource database (25 in figure 2, interpreted as a device controller) includes the type of resource and the capabilities of the resource (managing network resource information, see, e.g., page 3, paragraph [0026], lines 1-8); and

the provision of network services, such as routing, occurs as an interaction among service processing function, universal directory function, and nodal resource manger (functioning as a router, see, e.g., page 3, paragraph [0027], lines 1-7).

Therefore Porter teaches a node, resource manager, serves as a gateway or edge router to all of the network resources belonging to its particular domain (network).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Mark to include a plurality of nodes, resource managers, serve as a gateway or edge router to all of the network resources belonging to their particular domain (network), as taught by Porter in order to utilize the existing gateway or edge router as a network resource manager.

Mark in view of Porter do not teaches that a set of resources in the second group are aggregated into a single resource in the first group.

Barkai teaches as follows:

level 2 network (equivalent to applicant's second network level with MAC address) consists with switch and workstations are connected one another (see, e.g., col. 4, lines 3-12 and figure 1);

level 3 network (equivalent to applicant's first network level with IP address) consists with routers (see, e.g., col. 4, lines 3-12 and figure 1); and

a method of establishing a session layer virtual local area network (hereinafter VLAN), comprising the steps of defining a multicast flow and assigning members of the session layer VLAN to the multicast flow, mapping a multicast IP address assigned to the session layer VLAN to a multicast media access control (hereinafter MAC) address, declaring a session layer VLAN across all level 2 devices in the network and enabling multicast MAC traffic on those ports of the level 2 devices corresponding to the members of the session layer VLAN (see, e.g., col. 3, lines 1-10).

Therefore, Barkai teaches a direct communication to a set of resources belong to the other network by utilizing the well known VLAN mechanism.

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Mark in view of Porter to include the well known VLAN within two different network layers as taught by Barkai in order to maximize network efficiency.

Regarding claim 58, Mark teaches as follows:

a third network level (interpreted as another second network level as explained above, enhanced packet network 114 in figure 3) having a third addressing scheme (PPP packets 202 in figure 4), and the method comprises the further step of:

controlling the resources of said third protocol level by a third group of NRMs (interpreted as routers in the IP network)(controlling resources of a network is the inherent router's function); and

exchanging resource requests between any of the NRMs of the first and second network level using the first addressing scheme (two networks communicate via 1st E-LER, 116 in figure 4, by using IP data packets, 200 in figure 4, see, e.g., page 4, paragraph [0063]).

Regarding claim 59, Mark teaches as follows:

performing an address mapping between the first and third addressing schemes (enhanced label multiplexer receives user IP data packets and converts them to PPP packets, see, e.g., page 4, paragraph [0063], lines 5-8 and figure 4).

Response to Arguments

4. Applicant's arguments with respect to claims 36-68 and 70 have been considered but are moot in view of the new ground(s) of rejection.

A. Summary of Applicant's Arguments

In the remarks, the applicant argues as followings:

1) The Official Action indicates that the resource managers (NRMs) of the claims correspond to routers in the IP network disclosed in MARK et al. because controlling resources of a network is an inherent function of a router. However, this is not correct. A

router routes packets, but does not control resources of a network. A conventional router as no knowledge of the resources available in a network and has no functionality to "control" the resources; and

2) PORTER et al. discloses one network resource manager, while the invention claimed includes communication between different network resource managers. The inter-network network resource manager communication of the present claims (exchanging resource requests, address mapping) is not disclosed or suggested by PORTER et al. alone or in combination with MARK et al.

B. Response to Arguments:

In response to argument 1), Mark does not explicitly teach the control function of the network resource managers even though a router always manages and controls network resources, such as servers, hosts, and any nodes belong to the router consisting a network (routers manage the quality of route for network resources connected with and control the network resources by a routing decision).

Porter further teaches as follows:

a resource manager (13 in figures 1 and 2) receives resource requests and allocates resources to the service processing function (19 in figure 2) in response to resource requests (see, e.g., page 2, paragraph [0011], lines 11-13);

the resource manager includes a switch fabric, service processing function, universal directory function, nodal resource manager and nodal resource database (see, e.g., page 2, paragraph [0024] and figure 2);

a nodal resource manager (23 in figure 2, interpreted as a network controller) serves as a gate keeper to all of the resources belonging to its particular domain (see, e.g., page 3, paragraph [0025], lines 1-3);

a nodal resource database (25 in figure 2, interpreted as a device controller) includes the type of resource and the capabilities of the resource (managing network resource information, see, e.g., page 3, paragraph [0026], lines 1-8); and

the provision of network services, such as routing, occurs as an interaction among service processing function, universal directory function, and nodal resource manger (functioning as a router, see, e.g., page 3, paragraph [0027], lines 1-7).

Therefore Porter teaches a node, resource manager, serves as a gateway or edge router to all of the network resources belonging to its particular domain (network).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify the edge router used in Mark to include the resource management function as taught by Porter in order to perform as a resource manager as well as a router.

In response to argument 2), Porter teaches as follows:

a resource manager (13 in figures 1 and 2) receives resource requests and allocates resources to the service processing function (19 in figure 2) in response to resource requests (see, e.g., page 2, paragraph [0011], lines 11-13);

the resource manager includes a switch fabric, service processing function, universal directory function, nodal resource manager and nodal resource database (see, e.g., page 2, paragraph [0024] and figure 2); and

a nodal resource manager (23 in figure 2, interpreted as a network controller) serves as a gate keeper to all of the resources belonging to its particular domain (see, e.g., page 3, paragraph [0025], lines 1-3).

The examiner interpreted the plurality of nodes (13 in figure 1 and 2) as the applicant's network resource manager not the network resource manger (16 in figure 1), and also the nodal resource manager (23 in figure 2) residing in the plurality nodes serves as a gate keeper to all of the resources belonging to its particular domain (local network). Furthermore, it has been held obvious to duplicate parts for multiple effects. See St. Regis Paper Co. v. Bemis Co., 193 USPQ 8 (7th Cir. 1977). With this in mind, one of ordinary skill in the art would find it obvious to provide multiple network resource managers to provide a load balancing effect in order to reduce bottlenecking at one particular manager.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEONG S. PARK whose telephone number is (571)270-1597. The examiner can normally be reached on Monday through Friday 7:00 - 3:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. S. P./
Examiner, Art Unit 2454

November 14, 2008

/Joseph E. Avellino/
Primary Examiner, Art Unit 2446